REFERENCE

R. Y. BAILEY *discusses*

TROPICAL KUDZU

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SEPTEMBER 1945

SOIL CONSERVATION

OFFICIAL ORGAN OF THE SOIL CONSERVATION SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE, WASHINGTON, D. C.

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SECRETARY OF AGRICULTURE

HUGH H. BENNETT
CHIEF, SOIL CONSERVATION SERVICE

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Front Cover: This plot of tropical kudzu was the best source of green forage for cows at the Federal Experiment Station in Puerto Rico during the extended dry season early this year. Photograph taken by the Station.

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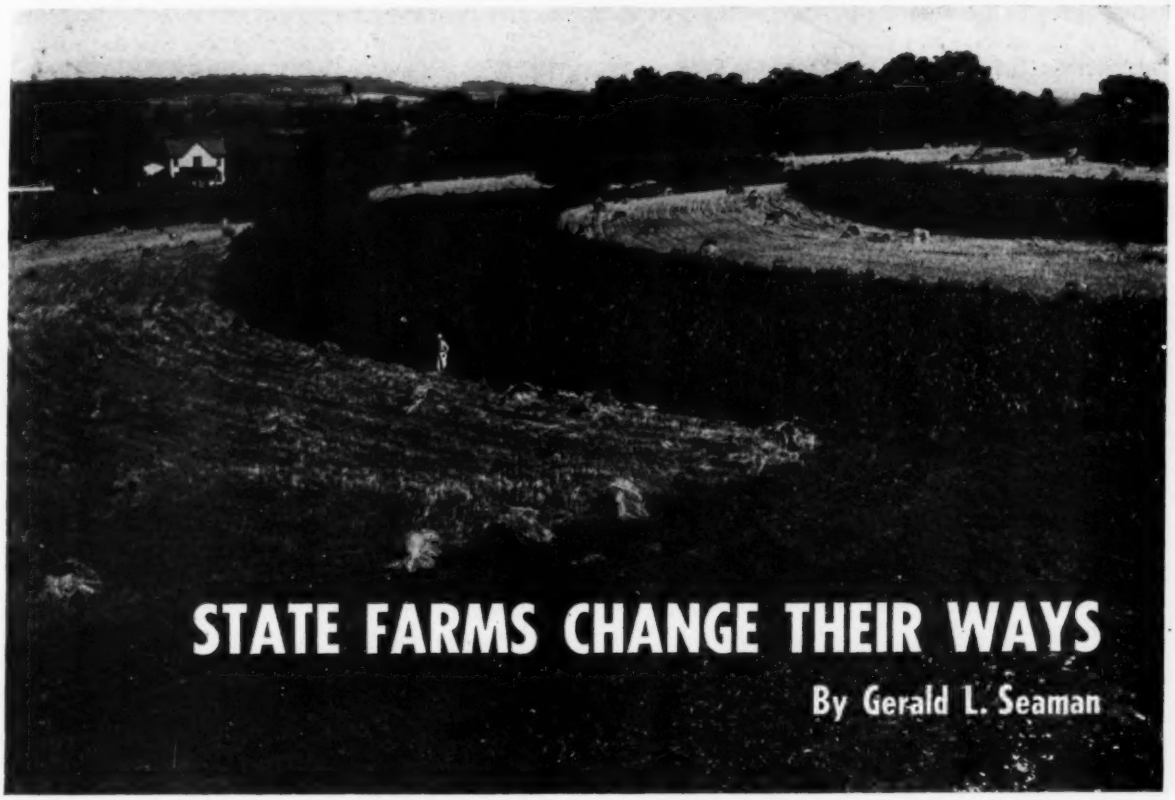


STATE FARMS CHANGE THEIR WAYS

By Gerald L. Seaman

Conservation farming is proving itself in Ohio on the 21,247 acres owned and operated by the State at 22 mental and penal institutions where crops valued at $2,656,000 were produced in 1944.

John D. Bragg, chief agriculturist of the Ohio Welfare Department, credits conservation practices with putting the institutional farms on a sound food production basis at a time when he and his farm managers were about ready to give up trying to grow cultivated crops on various eroded fields.

Back in 1937, potatoes were produced on 20 of the farms to get enough to feed the State's wards. The job of supervising potato production at that many points, and the low yields, were discouraging. This was particularly true at the Apple Creek Institution for the Feeble Minded. Bragg and Cecil Edwards, farm manager, were all set to turn one potato field into pasture.

Two Soil Conservation Service men, D. W. Galehouse and W. S. Ufer, had been observing the Apple Creek institution's fields and were asked to take a hand. They made a soil survey. The field was terraced and laid out in contour strips.

NOTE.—The author is regional head of current information, Soil Conservation Service, Milwaukee, Wis.

Strip-cropped field on farm at Ohio State Hospital.

Since these conservation practices were adopted, that low-yielding, eroded potato field on the Apple Creek farm has been producing 300 bushels of potatoes, 75 bushels of corn, or 3 tons of hay per acre.

Results were so startling at Apple Creek that Bragg asked the Soil Conservation Service for technical assistance on the other 21 institutional farms. SCS men went to work, taking soil inventories at all the state farms and changing the cropping systems to fit the land.

Today potatoes are grown on 9 farms rather than 20 as in 1937. Yields have increased from an average of less than 100 bushe'ls per acre to a good 250. The improvement was brought about simply by concentrating the potato production on the farms where surveys showed the soils best adapted to the crop. Only 9 sets of potato-growing equipment are needed now.

In Ohio each institution's land is now considered a component of one big farm rather than as a separate, independent unit. The 9 institutions growing potatoes ship them to the other 13. Bragg and Earl Tussing, Extension Service potato spe-

cialist, agree that the potato yields obtained in the past few years were not possible until production had been shifted to adapted soil managed the conservation way.

On the basis of 8 years' experience with conservation farming, Bragg says that the soil survey maps of the state farms have been of valuable assistance to him and his farm managers. He keeps one set in his office, takes another set with him on visits to the farms, and each farm manager has a set.

"Use of the maps," Bragg says, "has a valuable effect on the men in charge of the institution farms. They have become soil conscious and have really studied their land. I feel their success with the farms is due to this new interest which also keeps them interested in continuing their service.

"Much of the improvement in managing our soil is due to the cooperation received from the farm managers and superintendents in charge of the various institutions. Our farm managers have served an average of slightly more than 17 years each. They have been a part of the system long enough to adopt and practice good methods and to develop pride in the farms they manage.

"As a result of the soil surveys, we've already made adjustments on one-third of our land. We're including contour cultivation, strip cropping, diversion ditches, terraces, and longer rotations.

"We've changed the direction of cultivation on many fields where there isn't much slope but where we had been plowing up and down. Even on fields which did not need contouring, we lengthened the rotations to include more sod."

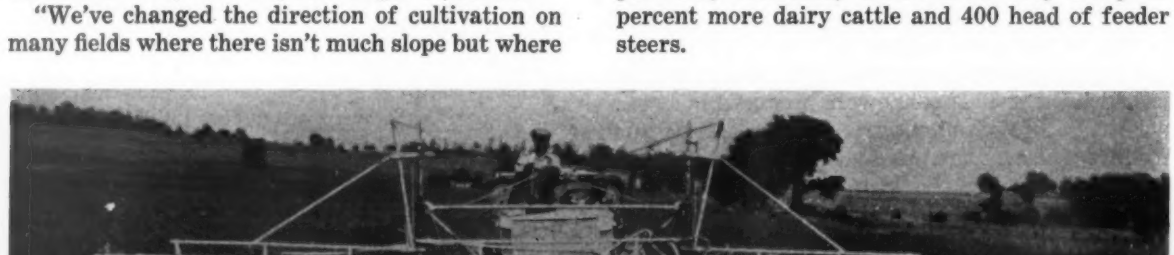
Permanent pastures and woodland also show the influence of conservation practices. Several hundred acres of pasture on steep or badly eroded slopes have been converted to protected timber.

Outstanding examples of this shift are found at the Lebanon State Farm, at the Massillon and Athens State Hospitals, at the Boys' Industrial School at Lancaster, at the Apple Creek institution, and at the Mt. Vernon Sanitorium.

At the Lebanon farm, 70 acres of second-bottom land, previously too wet to cultivate, are now in crops because the hill land above is in pasture rather than cropland and more water is kept where it falls. On another farm, more cropland was made available by tile-draining a pasture to enlarge the truck crop acreage. On most of the farms some formerly cultivated land has been shifted to pasture.

Bragg finds that the net result of changes made so far is a smaller pasture acreage which, nevertheless, has an increased carrying capacity.

"We had to maintain our dairy production," he explains, "so we started using lime, fertilizer and manure, on the pastures and mowing to control weeds. Formerly, the pastures were able to support only our dairy herds. Now they carry 15 percent more dairy cattle and 400 head of feeder steers.



Ten-row potato sprayer operating on farm at Ohio State Hospital, Apple Creek, Wayne County.

Contour strips on farm of Boys' Industrial School, Lancaster, Fairfield County.

"Conservation farming also has made us more insistent on the application of lime and fertilizer to our cropland. When we used to miss a field once in a while, we didn't feel greatly concerned. But now when we miss treating a seeding in a set of strips it upsets everything."

Woodlands on the Ohio institution farms are auxiliary state forests and are being cropped under the supervision of the State Division of Forestry. All lumber is used on institution farms.

"To the extent that it keeps us out of the market for lumber," Bragg says, "it is contributing to the supply needed for war activities. In fact, the same thing might be said of all agricultural production at the state farms. Every pound, bushel or gallon we produce need not be taken from supplies necessary for our armed forces, our allies and our civilians."

Wildlife, as well as truck crops, feed crops and timber has a place in the conservation plans for institution farms. Small and irregular patches not lending themselves to other uses were planted to shrubs to produce food and cover for wildlife. Harvesting of the wildlife crop by hunters has been provided by a controlled game removal program developed in cooperation with the Ohio Division of Conservation and Natural resources.

Ohio Soil Conservation Service men are continuing their cooperation with Bragg in saving and improving the soil on the institutional farms. A concentrated program was carried on this spring when district conservationists visited each of the farms at the invitation of Bragg and his farm managers and the institution superintendents.

Typical of some of the reports the conservationists brought back is this one by H. T. Marshall of Coshocton who visited the State Sanitorium at Mt. Vernon:

"All conservation work is being carried forward in good shape. Mr. Cromwell, the farm manager, wants to do some drainage work soon. I promised our assistance."

H. B. Haskins, district conservationist at Hamilton, made the following comments after visiting the Lebanon State Farm:

"I feel that William Webb, farm manager, has done a fine job. The farm certainly looks a lot better than it did in the fall of 1938."

A visit to the Osborn State Farm at Huron by H. E. Hecker, district conservationist at Mt. Gilead, led to this report:

"They have done a marvelous job in developing this farm and are doing a good job following the conservation plan as set up. I was very much impressed by the green cover crops."

Hecker also visited the Ohio State Reformatory at Mansfield and observed: "It is very evident that the upland is now much more productive and that alfalfa now grows where red clover did not do well several years ago."

The Hawthornden State Hospital Farm at Macedonia, Ohio, was visited by A. R. Sanford, district conservationist at Cuyahoga Falls, who says:

"The conservation program here was planned 6 years ago. The present farm manager, George Gregory, was an employee when the layout work was done, and through his experiences in following the plan he is thoroughly sold on conservation farming. The bluegrass pasture is being managed

well, but better summer pasture is needed."

William S. Ufer, district conservationist at Wapakoneta and one of the two Soil Conservation Service men who helped start conservation farming on the institution farm 8 years ago, examined the Lima State Hospital farm this spring and comments:

"The control practices are excellent. The only place where there was evidence of erosion was on the small block of land along the highway. This field was in corn stubble this winter, and as Mr. White, the farm manager, pointed out, a cover crop winter grain would have eliminated this damage."

Regarding the soil conservation plan on the farm at the Institution for Feeble Minded near Orient, Pearl Fogle, district conservationist at Lancaster, makes the following report:

"Among some of the practices installed are 110 acres of contour planting of row crops, 35 acres of strip cropping, and 200 acres of limed pasture of which 150 acres have been mowed to control weeds. Two tracts of woodland have been fenced from livestock and natural reproduction is now taking place in both. The cropping system has been changed from a 3- to a 4-year rotation of row crop, wheat, and 2 years of meadow. Since the conservation plan has been in effect, corn yields have increased from an average of 40 bushels per acre to 55. While there are still some active gullies, the situation is much improved since strip cropping was installed."

Twenty-year-old stand of white pine on farm at Ohio State Sanatorium, Mt. Vernon, Knox County.

1945 Ohio Conference

By William W. Reitz

The 1945 Conference on Conservation, Nutrition, and Human Health—the fourth in the series—was held on the campus of Ohio University, Athens, June 30, and July 1. This conference, which is becoming a national and international institution, was sponsored this year by Friends of the Land.

For the first time there was no connection with the Ohio Conservation Laboratory for Teachers. Compensating for the camp atmosphere and "nearness to Nature" of previous meetings were the beauties of the campus and a greater degree of physical comfort. More than 150 persons registered. Most of them stayed overnight in dormi-

NOTE.—The author is head, educational relations section, regional office, Soil Conservation Service, Upper Darby, Pa.

tories and ate in the university's dining hall. Because of the appropriate location and the hearty cooperation of the University, it was agreed that future conferences should also be held in Athens.

Dean W. S. Gamertsfelder made the welcoming address in the absence of President John C. Baker, describing the gathering as a meeting of two pioneers: Friends of the Land, a leader in conservation education, and Ohio University, a forerunner in general education—the first institution of higher learning west of the Appalachian Mountains. He pointed out the need for conservation in Southeastern Ohio, and stated that the university recog-

Dr. W. E. Krauss.

nizes the conservation problems of this area and is trying to do something about them.

Dr. John Sitterly, associate professor of rural economics and sociology, Ohio State University, discussed "How Southeastern Ohio is Adjusting Her Land Use." One hundred years ago this part of Ohio was more thickly settled than now. The land was settled early and its resources exploited. Drainage was good and the soils were easier to work than the heavier soils farther west. The early settlers were not familiar with the use of the lime and commercial fertilizers, and if they had been, the difficulties of transportation would have restricted their use. Changing from subsistence farming to a money economy had a marked effect on the land. Forests disappeared. Soil fertility quickly lowered, and erosion became severe. Many

J. H. Sitterly.

aggressive farmers moved westward. Today the effects of soil-mining, bad land use, and poor farm management are everywhere evident.

State and local leaders are making concerted efforts to adjust the land to its natural uses and to introduce better farm practices. Only two-thirds of the land is classified as suitable for farming. It is proposed to put the remainder in forest, and to make farm forestry and wildlife management an important factor on individual farms. Farmers are encouraged to shift to those farm crops which are best suited to the nature of the land. Soil and water conservation practices gradually are being introduced. The organization of conservancy districts in the larger watersheds may aid considerably.

The Reverend Henry Retzek, pastor of St. Alexius Church, West Union, Minn., talked about "The Church in Rural Reconstruction." Retzek was born in Chicago and served as a chaplain in World War I. At the end of that conflict he requested his bishop to send him where he might have and enjoy "peace, peace, peace." After several appointments, he finally became the pastor of the small rural parish at West Union.

Many a churchman would have been content to confine his efforts to the spiritual needs of his flock, and to enjoy the peace which he says is found only in the country and which cannot be

bought with money. Not so, Father Retzek. He threw his energies into the material welfare of his parishioners. At first he helped in harvesting their crops. Then he delved into the causes of low crop yields and the quality of the crops produced, particularly their nutritive value. He found that they were low in needed minerals and the vitamins. This led him to believe that the soils themselves were deficient. In his search for assistance Father Retzek appealed to a State experiment station, and offered to cooperate through personal research. His novel suggestion was not warmly welcomed. It was intimated that a pastor's place was in the pulpit.

Father Retzek, however, was not deterred. He felt a responsibility for the situation at his door. He read everything he could lay hands on that dealt with soils, fertilizers, food, nutrition, and farming methods. He decided that the soil is fundamental to physical well-being yet he found the soils science of that day in grand confusion. Of the 226 courses offered by a State College of Agriculture whose catalog he examined, only 9, or four percent, dealt even remotely with the soil.

Father Retzek felt that a clergyman is in a strategic position—the right kind can do as much as a county agent to provide effective leadership to farmers. He believed that anyone who faces a congregation weekly should in time influence greatly the rural trend. Yet, he asks, why does not the church do more about farmers' problems?

In addition to teaching and preaching, Father Retzek writes a column on soil depletion and its remedies for a weekly newspaper. But he gets his best results from what he calls his "subtle inductance method." "Tell the farmer that his land is poor and he will resent it; perhaps he will kick you off. Show him slowly and convincingly and he will realize it for himself." So he gets the farmer to perform simple experiments. When he knows that a piece of land needs lime, he gets the farmer to apply an appropriate amount of lime to a portion of the field. After the farmer sees the difference between 8-inch alfalfa and 24-inch alfalfa, no further argument is necessary. He uses the same tactics in regard to the need for nitrogen, phosphorus, potash, and organic matter.

Father Retzek has been working along this line with the farmers of his parish for 14 years. During this time he has been preaching the importance of high-protein foods. He tells his people that nitrogen is a factor in the production of protein, and that lime assists in the production of nitrogen. He conducts nitrogen tests, by the plant tissue method, on many varieties and strains of corn,

Father Retzek.

under many production conditions. To interest the farmer, he has him shake the test tube and read the results of the indicator from the color chart. By this method he has gotten the farmers to select better seed and use better methods of production. The result is that the corn now grown in his parish has a protein content from 6 to 10 percent higher than formerly. Father Retzek states that the more religion a man has, the better farmer he will be.

Bryce C. Browning, secretary, Muskingum Conservancy District, New Philadelphia, Ohio, spoke on "Protection of a Watershed."

In the spring of 1913, almost the entire State of Ohio was lashed by heavy rains. Floods damaged the whole of the Ohio River basin. The destruction of life and property in the Miami and Muskingum valleys was terrific. Following this disaster, the State legislature passed an act providing for the organization of conservancy districts. Shortly afterward the Miami Conservancy District came into being. This latter project involved the construction of 5 dry dams surrounding Dayton. These dams were fitted with conduits which accommodate the normal flow of the stream channel but automatically impound surplus water during severe storms.

The Muskingum Conservancy District was organized in 1934, though extensive surveys, plan-

ning, and other preliminary work were carried on during the preceding 10 years. This district differs from that of Miami in that it is a completely planned watershed, including flood control, water conservation, and recreation. The total cost runs to about $45,000,000, provided from PWA funds, State appropriations, and assessments for local benefits. Instead of dry dams, the dams in the Muskingum District are kept filled to a certain height. By closing gates above this level, the capacity is increased and the water is held back until the gates are opened. The permanent lakes cover 16,000 acres. A recent survey of the recreational facilities alone gave an appraisal value of $807,000,000.

Dr. Walter C. Lowdermilk, assistant chief, Soil Conservation Service, spoke on "Soil Erosion and Civilization." Through lantern slides he showed the extent of erosion in Mesopotamia, Palestine, and Trans-Jordan, and discussed its effects on ancient and subsequent civilizations. By similar means he presented the erosion and other agricultural problems confronting China today. He has been advising the Chinese government in its attempts to solve some of these problems.

Lowdermilk holds that a continued high state of civilization depends upon the proper use of the land and the maintenance of soil fertility. He points out that civilization rested upon three agricultural efficiencies: crop efficiency, land efficiency, and farmer efficiency. In contrasting the United States with China, he notes that in China the first two efficiencies were high while the third was low. On the other hand, in the United States, farmer efficiency is high while the other two are quite low. He warns that if this country is to survive it must have all three efficiencies.

The speaker reminded the Athens Conference that the population of the world has multiplied four times during the last 300 years. This was because of the occupation of new frontiers and industrialization. There are no more geographical frontiers, but there is a frontier under our feet. We can open it through better land practices. Forty percent of the farmers in the United States today are subsistence farmers. If the present rate of increase in population is to be maintained, the production on these farms must be raised. The average sized farm, in this country, under a high state of fertility should support eight families—seven besides the farmer's own household.

Louis Bromfield, author, farmer, and vice president of Friends of the Land, dealt with the topic, "Saving This Land of Ours." Nobody, declared Bromfield, can determine what this war is costing in terms of money. It must be measured in the forest cut down, the soil destroyed, the petroleum and metals consumed, the health of the people, the lives of the boys who fought. The people of Germany today are not looking for money, they are looking for food. Food is the thing that now counts most.

The strength of a nation depends upon the health of its people. This in turn depends upon food. The quality of the food is determined by the fertility of the soil. Evidence of these facts has been brought out through Selective Service during the present war. In Alabama, 7 men out of every 10 were rejected because of physical defects. In Colorado, 7 out of 10 were in excellent condition and were accepted. Bromfield added, that on his farm in Pleasant Valley, Ohio, crop diseases and insect pests are being defeated by balancing the mineral matter in the soil.

Dr. Martha Koehne, nutritionist, State Department of Health, Columbus, Ohio, told of the changing food habits of our people. The United States has a wider variety of food habits than any other country. They are influenced by religion, nationality, local customs, individual tastes. Other controlling factors are the abundance or scarcity of certain edibles, because of emergency, isolation or poverty.

"The Adequacy of Our National Food Supply" was discussed by Dr. William E. Krauss, chief of the Dairy Department, Ohio Agricultural Experiment Station, Wooster. He is also a member of the subcommittee on food supply, National Research Council.

Krauss pointed out that food is a powerful weapon, both in war and in peace. He ascribed a large waste of valuable nutrients by their separation and discard. For example, there is as much energy in skim milk as in butterfat.

Many of the animal organs, such as glands, kidneys, brain, blood and sweetbreads, have more food value than "red" meat. Many of the cheaper cuts are more nutritious than choice steaks. Other types of animal products, such as milk, eggs, fowl, fish, lamb, and pork, are often richer in valuable minerals than beefsteak.

During the present emergency there has been a seeming shortage of certain foods, though it is doubtful whether these were insufficient at any time to meet the actual needs. A shortage is a deficiency in relation to demand. During the war, we drank more milk and fruit juices, and ate more meat and many other foods than ever before. On the other hand, we consumed less butter and other fats. Through victory gardens, civilians produced

almost half of the supply of vegetables. The armed forces were the greatest victory gardeners in the world. Not only were large forces deployed to care for and harvest crops in this country, but in conquered countries they produced huge quantities of vegetables.

There will be approximately five percent less food in 1945 than in 1944, declared the speaker. The supply of beef should be better soon. The outlook for pork is not so good. The egg situation will get worse. In spite of this, the food supply will be ample in the United States. The enrichment of bread and cereals is a great contribution to human welfare. We should aim at greater consumption of milk, cereals, and vegetables. An attempt will be made to increase milk production and to use all the solids. More people could be fed if they ate the vegetable matter directly, rather than first feeding it to animals. But much vegetable matter is not suitable for human food. In the future, much of the nutritive material may be extracted from such vegetation and made into synthetic foods. The time may come when there will be severe competition between natural foods and synthetic foods. Drastic changes in dietary patterns will change production patterns, and therefore, conservation patterns.

Dr. C. R. Orton, Dean of the College of Agriculture and Director of Extension, University of West Virginia, gave a very enlightening talk on "Soil in Relation to Health."

"Quoting from the Book of Genesis, Dr. Orton pointed out that the sequence of creation was significantly as follows: sunlight (light), air (firmament and sky), water, soil (dry land), plants, animals, man. Sunlight, air, water, and soil are primary resources. The last two are largely within the province of man. Plants and animals form a second class of resources, which constitutes a great intermediary for the conversion of the mineral and other natural elements into food for man. Man was directed to have dominion over these resources. Given the power to reason, he has the responsibility for acting wisely.

In discussing the mineral elements in soils and plants that are essential to man, he presented a table from the U.S.D.A. Yearbook for 1938 that showed that, with few exceptions, these minerals were found in approximately the same proportion in soils, plants, and man. From these facts, Orton deduced that any deficiency of minerals in the soil will affect the health of man.

"The Potential Role Which Nutrition Can Play in the Maintenance of National Health" was elaborated upon by N. Phillip Norman, M.D. Dr. Norman is a pioneer clinical nutritionist engaged in active practice. For a long time he has used his efforts to interest physicans in the prevention of illness through the prescription of balanced nutritional diets. He is also co-author, with James Rorty, of a book widely acclaimed for its comprehensive treatment of the nutrition problem.

Dr. Norman pointed out that we have spent many millions of dollars for agricultural improvement without appreciably decreasing physical defects or improving the general health of the people. To support his contention, he, too, alluded to the rejection rate of Selective Service.

Dr. Norman sees the problem as much more than one of medical care. The approach, he contends, should be direct. It should aim at the nutrition in our everyday diet, and the source of the elements which make for nutrition, the soil. More study, he feels, should be given to the relation between food and chronic diseases. Cancer and heart disease accounted for 57 percent of deaths in 1941. Less than 62 cents per death was spent on the control of these diseases, and less than 6 cents per death on research regarding them.

Russell Lord, editor of *The Land,* reported briefly on his recent trip to the British Isles, dwelling particularly on the food situation there during the war and now. By plowing up every possible square foot of soil, Britishers were able to raise their home-production of food from one-third to two-thirds of their total consumption. He found that through rationing and meal planning by restaurants and hotels, not only was the health of the people maintained but food habits bettered.

Jonathan Forman, M.D., editor of *The Ohio State Medical Journal* and a practicing physician, summarized the Conference—"Current Thinking in Conservation, Nutrition and Health"—tracing the pattern of the program from its start with soil and water, its progress through food, its culmination in consideration of nutrition and human health.

SUPERVISORS ON STATE COMMITTEE

The Georgia legislature has amended the State Soil Conservation Districts Law so as to include two soil conservation district supervisors as members of the State Soil Conservation Committee. T. B. Thornton, chairman of the board of supervisors of the Broad River Soil Conservation District, and John C. Wise, secretary of the board of supervisors of the Lower Chattahoochee Soil Conservation District, have been appointed by Governor Ellis Arnall.

DETROIT LOOKS TO THE LAND

Industrial, agricultural and business interests of Michigan are working together these days on a post-war prosperity program, in which the development of a more efficient agriculture is given the position of first and primary importance. The Detroit Board of Commerce inaugurated the project because its members have become convinced that their ultimate economic salvation depends on a prosperous agriculture.

More than 300 persons called together by the association, representing approximately 70 organizations, pledged themselves to the support of a program of which the theme is "Prosperity From the Ground Up," a slogan reflecting the fact that all wealth springs from the soil.

Detroit, the world's greatest manufacturing center, will depend on the farm to a steadily increasing extent in the years to come for the raw materials of industry, it was felt.

Keynote was struck by Roger M. Kyes, President of a manufacturing company, who declared:

"It is possible for us to lower the cost of production of raw materials by putting our land in shape, by recreating the forests, by cooperating with the American farmer so that he can have proper marketing outlets, proper transportation, proper legislation, and all the various things that are necessary for him to do his job of giving you the raw materials you require at a low cost of production if economically we are going to be on a sound basis."

"Sixty-five percent of the raw materials used in American manufacture come from the land," declared the speaker, who also told his hearers that "Detroit will die on the vine unless we go back and pour plenty of water on the roots."

Indicative of its interest, the Detroit Board of Commerce has adopted the "Prosperity From the Ground Up" program as a major activity, and is pushing it aggressively. H. Lynn Pierson, Chairman of the Board's Agricultural Survey Committee, has named advisory and executive groups to counsel and direct operations.

Actively identified with the project are leading figures in the industrial and business life of Detroit, as well as city and county officials, educators and others. Among those who have evinced keen interest are Dean E. L. Anthony, of the Department of Agriculture, Michigan State College. Milton P. Adams, of the Michigan Stream Control Commission, P. J. Hoffmaster, Director of the State Conservation Commission, Dean S. T. Dana, School of Forestry and Conservation, University of Michigan, Charles Figy, Commissioner of Agriculture, C. L. Brody, Michigan State Farm Bureau, Roswell G. Carr, Farm Security Administration, E. C. Sackrider, Soil Conservation Service, and a number of country agricultural agents, Soil Conservation officials, and representatives of the National Council of State Garden Clubs, The State Farm Bureau, the Michigan State legislature, 4-H Clubs, National Farmers' Guild, the Michigan State Grange and other groups.

AS SEEN FROM THE AIR

The dramatic performance of soil and water on the stage that is Earth is noted and vividly reported in a letter from Navy Lieutenant William L. Southworth:

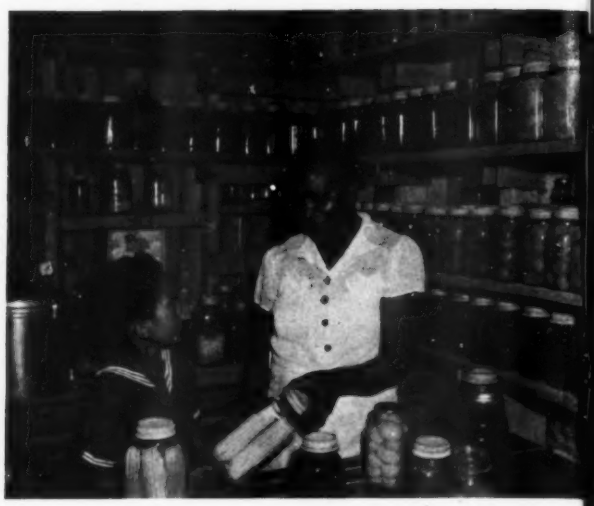
"I have just seen the most sensational demonstration of *real* soil conservation I have ever witnessed, about 10 or 15 minutes south of Omaha. I am enroute home to Sioux City, Ia., by plane and am writing this note in flight for fear I'll neglect telling you about it later.

"There must have been one hell of a rain either last night or this morning in this corner of Nebraska because field after field was chewed raw by new gullies—many of them were still choked with water or debris. Even pastures on what looked like very moderate slopes were slashed wide open, bleeding soil at a terrific rate. There wasn't a sign of a contour, a terrace, or check dam, as far as I could see in the very limited visibility.

"But all at once we began flying over what obviously is a demonstration area or soil conservation district. About 4 out of every 5 farms were —or looked like they were—fully protected. It was the most amazing contrast. Terraces were still chockfull of water. Contoured slopes looked like lakes tipped at a 45 degree angle on the hillside. Smaller lakes strung out as snake-like beads in gullies that had been check-dammed. And then all at once we were out of the area—and there went the soil again, off to the Gulf a mile a minute.

"I guess it was that abrupt and almost terrifying contrast that made me want to write someone about what I'd seen. You probably know the area well that I'm writing about and I just thought you'd like to know how it looked after a real test. It looked almost too good to be true—and if you ever had any doubts as to whether you and your gang are *really* helping to win the war—forget them once and for all. Those contoured and protected slopes will produce FOOD this year. I can't see how all those new gullies can produce *anything*."

Technician Carter (right) points out to James Archie the silt deposited in oats stubble and lespedeza when terrace above was overtopped by heavy rain.



There's food aplenty in the Chisolm pantry. Tom and his mother know this canned corn on the cob will taste mighty good next winter.

NEGROES MAKE GOOD SO

By A. F. RUFF

In the summer of 1943 I went with Thomas E. Carter, Soil Conservation Service Negro technician in the Catawba Soil Conservation District, to visit the farm of James Archie in the black jack lands of Chester County, S. C. Archie's eroded farm was then being planned for complete soil conservation.

A few days ago I spent another day with Carter. Again, we called on James Archie. I actually did not know the place. Not until I had walked over the farm and met the owner did I remember having been there before. Archie's friendly greeting and ready pronouncement of my name stirred my memory.

NOTE.—The author is assistant state conservationist, Soil Conservation Service, Columbia, S. C.

James Archie cultivates his cotton in a field that is contour-tilled, terraced and strip-cropped.

The Chisolms sold $1,018 worth of milk in 1944. Cotton yield increased to 12 bales from 12 acres last year. Here young Tom waits for father and sister Lizzie to load milk.

Joe Powell, Catawba Soil Conservation District, is proud of the lespedeza and oats he grew this year—the oats for grain, the lespedeza for hay.

SOIL CONSERVATIONISTS

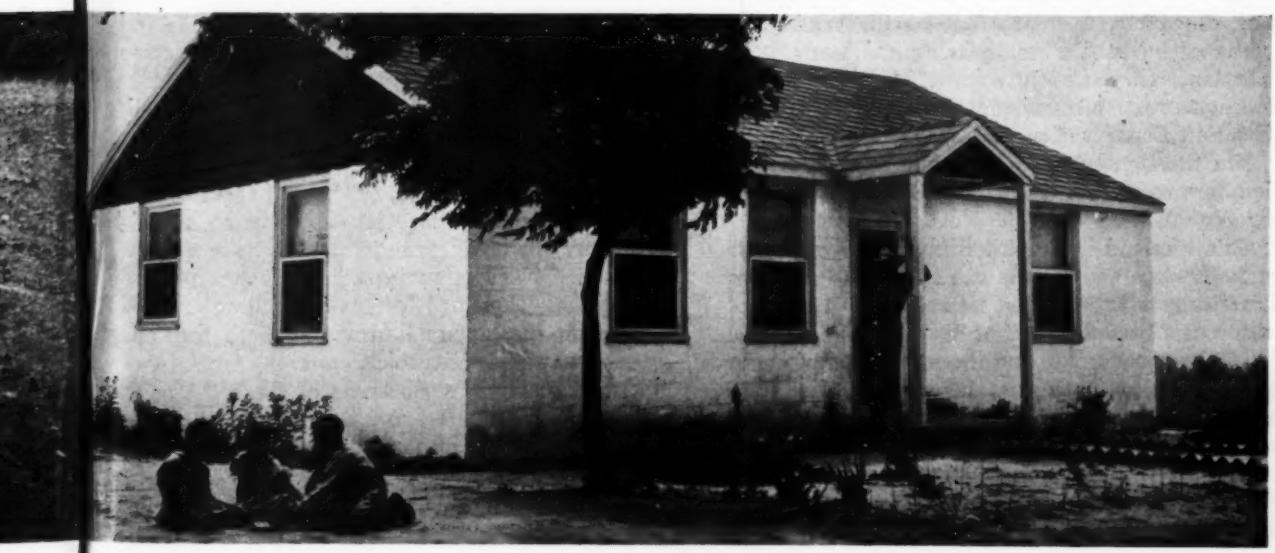
"James, where have I seen you before?" I asked.

"Why, Mr. Ruff," he replied, "don't you remember year before last you took me and Lloyd Boyd to see your place?"

Archie was right. He, Boyd, and Carter had gone with me two years before to see soil conservation practices on my farm near Rock Hill, S. C. I had bought this farm in 1934 when it was in a low state of cultivation and immediately began to apply first strip cropping, then all the known soil conservation practices. (In 1933 two tenants on this farm with 4 mules made 7 bales of cotton and practically no feed. Since 1938 two tenants consistently have averaged a bale or more cotton per acre and surplus feed for sale.)

At the time of the trip, the group had observed sericea and kudzu meadow strips, contour tillage, terraces, and other proved conservation measures.

Increased income from higher yields and diversified crops results in a better home for the James Archie family.



They were particularly interested in seeing the land which I had taken out of cultivation and planted to trees or kudzu, because this land was better adapted to permanent vegetation than to row crops like cotton or corn.

Of course I was delighted to see how Archie had remade a worn-out cotton farm. Archie is still primarily a cotton farmer but his soil is naturally adapted to small grain and grasses. For that reason, Carter and Archie had planned primarily for cotton and dairying in developing a soil conservation program. Modern terraces have been constructed. Five acres of formerly unproductive pasture have been improved. Kudzu has been planted on two of these acres to provide supplemental summer grazing.

Archie's first cotton crop, following a conservation rotation of lespedeza after oats, showed a material increase in yields. With the increase in hay crops because of the better methods of farming, Archie now plans to increase the number of his dairy cows from four to ten, and declares, "With the help I have received from the Soil Conservation Service and the Catawba Soil Conservation District, I can now see a bright future and a good farm for my children."

What I saw on Archie's farm, and on the farms of other Negro cooperators that day, proved what I already believed—that Negroes make excellent soil conservation farmers when they receive the necessary technical assistance and guidance. They are making good use of all the lands on their farms, growing the crops to which each field is best adapted. They are increasing their yields. They are diversifying farming operations so that cotton no longer is their only source of income. And, of course, they are reaping the benefits of increased income in better living standards.

Let me tell you about some of the other Negro Soil conservationists whom I met that day while with Soil Conservationist Carter.

Jim Chisolm told me that "the Soil Conservation Service and hard work together have paid for my $3,000 FSA farm."

Chisolm's soil conservation farm plan was made in 1940 when his income was only $600 per year. Practically all that income came from 8 bales of cotton. But because much of his soil was not suited for cotton production and there was a market for milk, Chisolm's farm was planned primarily for milk production. In 1945, this Negro farmer told me that he had grown 12 bales of cotton—a bale to the acre. In addition to the increased yield of cotton because of better land use, he produced and sold $1,018 worth of milk. Where he formerly had "two scrub cows," which supplied milk only for his family, he now has 13 milkers including some purebred animals. Chisolm has several daughters and he said that selling milk is easier for them than growing cotton. Because of the increase in grain production he was able to grow and sell $200 worth of chickens and turkeys last winter.

Charlie Davie, who lives on Route A, Chester, S. C., has done remarkably well, too. Davie's farm is sloping and when he made a farm plan with the Soil Conservation Service technician, his land was badly eroded. Much of it had to be planted to kudzu and sericea lespedeza. The remaining land has been terraced and put into strip rotation. Davie said that his cotton yield has increased from 200 pounds to 300 pounds, and that he makes as much cotton now on less land as he did before the eroded areas were taken out of cotton—and with less effort. Nine cows instead of three help him to sell his hay through the milk route for $720.

"I did not have enough hay to run me before I got in the program, even though I had only three cows," Davie explained. "My farm was getting smaller and smaller each year. Now I have more producing acres than I ever had before and it looks like I can stay on my farm." Davie is fully aware of the benefits of manure for increasing yields, and emphasizes that fact.

Dotson Barber of Catawba is an enthusiastic cooperator with his soil conservation district, and is high in praise for Technician Carter.

"I depend on Carter," Barber said. "He has helped me to get started the soil conservation way. I am almost able to stand alone now, but I still need his help. He has shown me how to farm more crops on fewer acres and to keep my land good at the same time. I have doubled my cotton yields and I got $300 extra this year from cutting undesirable trees for pulp and firewood. My woods are not only in better condition but during my slack time I got $300 spending money."

George Grey, who lives on Route 1, out of Chester, S. C., owns 361 acres, the largest farm we visited. He has done a good job of terracing and establishing all other practices that make a complete soil conservation program. He has planted four acres of kudzu, which is controlling erosion, improving the soil and providing both hay and grazing for Grey's livestock.

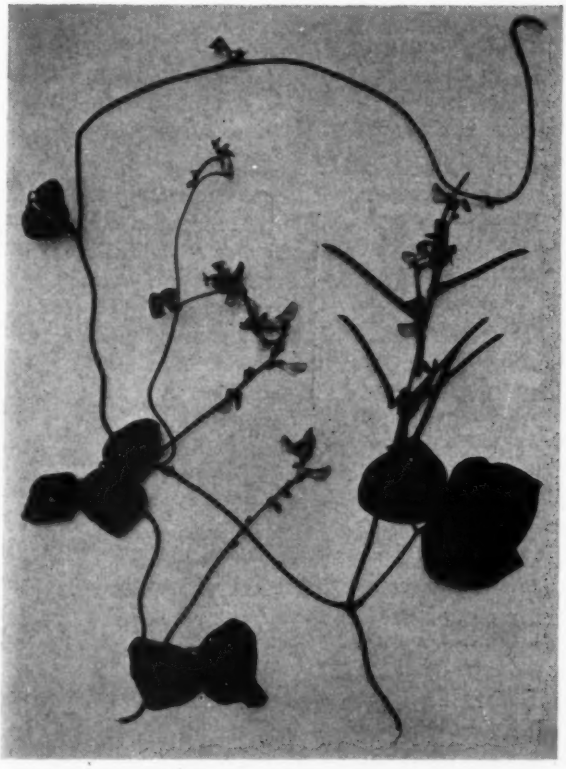
If you know the seriousness of the soil erosion problem in the South—and it is the Number One problem of the South—and need inspiration, I would suggest that you visit the farms of really good Negro cooperators.

(Continued on page 70)

TROPICAL KUDZU

By R. Y. Bailey

Dick Bailey examines seedlings of tropical kudzu growing in flower box at his South Carolina home.



Pueraria phaseoloides Benth is a vigorous stoloniferous legume which shows promise in Puerto Rico as a pasture and cover crop and in controlling erosion. It fruits heavily from December to February. Flowers are purplish white, pods black, leaves resemble those of soybean. Stolons readily root at nodes and to some extent at internodes. (Photo: Federal Experiment Station in Puerto Rico.)

Country boys when far away from familiar scenes and faces often come upon friends in the vegetation along the way. Most of us who are experienced travelers find ourselves, when traveling beyond our normal range, looking from train windows to see what grows alongside the tracks. Familiar species of trees, crops, or even weeds somehow make us feel a little closer home.

Our boys who have gone from the Soil Conservation Service to far places of the earth today are upholding the best traditions of country boys away from home. Their letters glow with descriptions of the agriculture of distant places. They chatter enthusiastically of the rediscovery of the familiar cotton and sweet potato and other plants.

Southern boys from this Service met an old acquaintance in the kudzu growing in tropical jungles on the islands of the Pacific, in China, and in other lands. Many of them have taken the time and trouble to describe the conditions under which they found kudzu growing. Their letters have given us useful information about the distribution of the wonder plant. They also have shown that these men who went from the Service still are conservationists at heart and are looking forward to the day when they shall return to their old jobs.

Lt. Col. William W. Stevens, assistant chief, regional soil conservation surveys division, wrote

NOTE.—The author is Chief, Regional Agronomy Division, Soil Conservation Service, Spartanburg, S. C.

his wife, Emily, to tell us that because of a dense growth of kudzu extending 20 miles he had found great difficulty in getting through a jungle in an advance across one of the Philippine Islands. Steve probably wasn't very glad to see this 20-mile strip of kudzu then, but doubtless will have interesting details to add when he returns.

My nephew, Capt. Charles H. Bailey, formerly work unit conservationist, Dothan, Ala., reported finding kudzu at several places in New Guinea and in the Philippines. In January he noted, "I found kudzu practically everywhere I went on the Coastal Plain of New Guinea, even finding it in the deep shaded portions of the jungle at times. Most of the grassland had kudzu growing *down in the grass.* Strangely, there seemed little inclination for it to climb the grass stems.

"I saw some old vines running along the ground in Kunai grass and they were often as big as ¾ of an inch in diameter. I dug up one of the crowns that was about 3 inches in diameter and close to 2 feet long. Even with the rapid growth in the tropics, I would guess it must have been all of 20 years old. Some of the runners on this one plant must have been 150 feet long. The best growth of kudzu I saw was about 8 miles west of Buna. The approximate location is longitude 148° 21′ east, latitude 8° 43′ south.

"None of the natives were able to tell me of any use they had for kudzu and none of them knew where it came from."

In April, Charles finally got clearance to mail samples of two kinds of kudzu seed collected on one of the Philippine Islands, along with clover seed and crotalaria seed collected on New Guinea. He arranged to get the seeds fumigated and they arrived at Spartanburg in good condition, ready for trial under entirely new environment.

As described in his letter, one kudzu species has flat, fuzzy seed pods similar to the old type of kudzu (*Pueraria thunbergiana*) grown here in the Southeast. The other was described as having small, rounded, smooth, black pods similar to miniature cowpeas.

The species having the smooth black pods like cowpeas appears to be similar to what is being called tropical kudzu in Puerto Rico. This species has been identified as *Pueraria phaseoloides* (javanica) Benth, according to Henry A. Telford, associate soil conservationist, Soil Conservation Service, and Norman F. Childers, assistant director, Federal Experiment Station, Office of Experiment Stations, Puerto Rico, in an article prepared for "Agriculture in the Americas."

Long runners enable tropical kudzu to thrive beneath trees in spite of the latter's competition for water and nutrients. This picture was taken 6 months after seeding. (Photo: Federal Experiment Station in Puerto Rico.)

The ordinary kind of kudzu that is being grown in the southeastern states was tried by the Soil Conservation Service in Puerto Rico, but did not grow well there. In contrast with the poor growth of ordinary kudzu the tropical kudzu made excellent growth. Complete stands have been established from seed in six months.

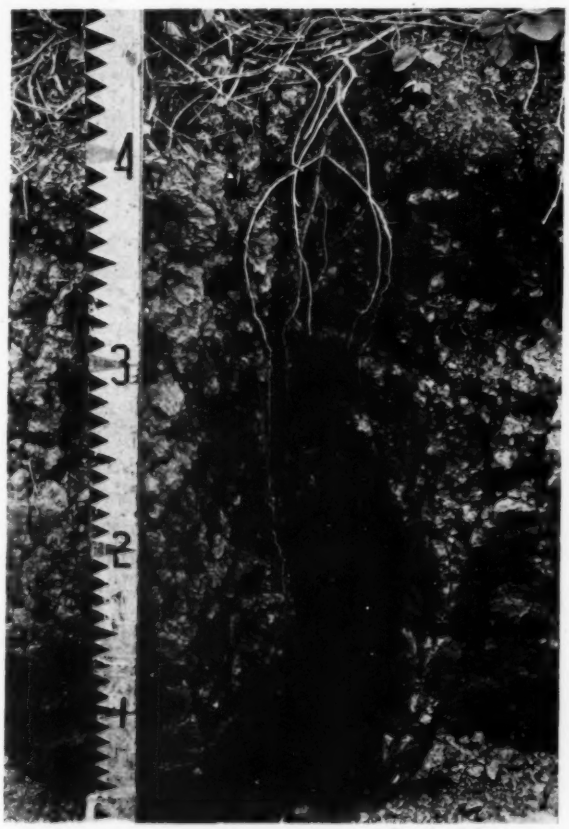
Tropical kudzu has proved to be drought-resistant and tolerant of both sunshine and shade in Puerto Rico, where it has been grown since 1940. It is palatable and is eaten readily by livestock. It is reported to be filling a definite place in Puerto Rico as an erosion-resistant ground cover that competes well with weeds and most undergrowth. It is reported to have been used extensively in Java, Malay, and neighboring countries as a ground cover in young rubber and cinchona plantations while they were becoming established. The Firestone Plantations Company, Liberia, West Africa, reports several thousand acres of it in their young rubber plantations.

One of the most interesting characteristics of tropical kudzu is its prolific seeding habits. U. S. Allison, director for the Service in the Caribbean area, is rather enthusiastic about the possibilities of this strain of kudzu producing sufficient seed to make harvesting by machinery a feasible practice.

Allison was in the regional office when the two samples of kudzu seed from the Philippines were received and it was his opinion that neither of these was the same as the species being grown in Puerto Rico. The seeds of the Philippines species were inclined toward a somewhat rectangular shape rather than a true bean shape.

Thus it appears that instead of but one tropical strain of kudzu the Soil Conservation Service may now have at least three separate strains. Out of the three may come something useful for areas where ordinary kudzu (*Pueraria thunbergiana*) is not adapted because of climatic or other factors.

The two samples of seed received from the Philippines were divided into three parts. One sample was sent to the regional nursery at Thorsby, Ala., a second to the nursery at Brooksville, Fla., and a third to Puerto Rico where the Philippine species may be compared with the tropical species (*Pueraria phaseoloides*) now being grown so successfully there.



Roots of 2-year tropical kudzu plant penetrate heavy Catalina clay soil more than 4½ feet. This explains why kudzu withstands drought periods better than most leguminous cover crops. (Photo: Federal Experiment Station in Puerto Rico.)

A few seeds of each species were planted in a porch box on the second floor of my apartment. The seedlings that are up will be tended carefully during the summer and will be exposed to the winter temperatures without covering or other protection. If any of them survives the winter under such adverse conditions, the use of these strains will not necessarily be confined to tropical climes.

Samples sent to the two nurseries and to Puerto Rico will give us an opportunity to study the performance of these new kinds of kudzu in central Alabama where the temperature sometimes goes as low as 10 degrees above zero for short periods, at Brooksville, Fla., where citrus fruits are grown, and in Puerto Rico where tropical climate prevails.

Why all the fuss about tropical kudzu?

Tropical strains that would grow well under the climatic conditions prevailing in several of the countries to the south of us might be very valuable. For example, Puerto Rico is finding that the tropical strain has great promise there as an erosion control and forage plant, whereas, *Pueraria thunbergiana* failed to grow satisfactorily there. In the Florida peninsula there is a vast area of sandy soils where an adapted, drought-resistant legume would have great value. *Pueraria thunbergiana* does not appear to meet this need.

The interest shown by people in tropical countries in Russell Lord's article in *Reader's Digest* indicated that in most of those countries an adapted strain of kudzu would be of great value. Of the more than 2,000 letters referred to this office from those who read Lord's article, several hundred were from tropical countries. It was not possible to read those letters without becoming conscious of the need for any perennial legume that may prove to be adapted under their soil and climatic conditions. It may be that tropical strains will provide at least a partial answer.

Even in the Southeast where the old kind of kudzu grows well, the excellent seed-producing habit of some tropical kudzu species holds out interesting possibilities.

The present status of tropical kudzu is that we have it under observation under a number of widely varying conditions, but that we know little about it. The preparation of this article was for the purpose of giving out the little information we have, but is in no sense intended to set any of us up as experts on tropical kudzu.

Information we have received through letters from Service personnel suggests the desirability

(*Continued on page* 71)

SUBSURFACE TILLAGE WINS FOR SIBBERNSEN

By A. E. McCLYMONDS

Participating at presentation of achievement award: Left to right—A. T. Pearson; County Agent Sam Lingo; Mrs. Sibbernsen; C. Edmund Anderson, work unit conservationist; Mr. Sibbernsen; Paul Tanner; Roy T. Kirkpatrick, district conservationist; Walter White, secretary of the agricultural committee of the Omaha Chamber of Commerce. Pearson and Tanner are with the company making the awards.

The award for superior agricultural achievement which is granted each week by one of the great oil companies goes to only 52 of the Nation's 6 million farmers in the course of a year. Winning it is a triumph for the individual far outstripping the $100 war bond, the pennant, the lapel pin and the framed scroll.

When A. H. Sibbernsen of Bennington, Neb., won the honor recently. It was a triumph for conservation farming. He practiced good land use and soil and water conservation as a means of getting production to the highest level and keeping it there.

An outstanding farmer, Sibbernsen takes advantage of all improvements in crop varieties, livestock production methods, and management. He is ever keen to new things. He will tell you that conservation farming makes the big difference between his own production and that of other good farmers who haven't yet adopted the modern methods.

"Improvement in crop strains and new crops won't help much unless you have fertile soil and water," Sibbernsen remarks.

NOTE.—The author is regional conservator, Soil Conservation Service, Lincoln, Neb.

A resident in the Papio Soil Conservation District, the first in Nebraska, he was one of its early cooperators. Actually, development of his present farm conservation plan got under way in 1934, when the Balir CCC camp built 5 dams in three big gullies. It really began to take form when the camp was transferred to the Soil Conservation Service, and Sibbersen and the Service technicians decided what needed to be done. Then came cooperation with the Papio district, organized in the spring of 1938.

Sibbernsen began farming in 1926, and has 800 acres in the steeply rolling eastern Nebraska loess hills area. Ordinarily he feeds out about 250 steers, 2,200 lambs and 500 pigs each year. About two-thirds of his land is in cultivation.

Today he is more firmly sold on conservation farming than ever. That is because he has achieved increased production with less work, and has also brought about improvement in his land. Those are good enough reasons at any time, but now, with food production requirements at peak, they carry special significance.

Before he started conservation farming, Sibbernsen had been troubled by serious soil washing

and consequent damage to crops and land. Two big gullies were growing rapidly and threatened to ruin a large part of his farm.

His conservation plan embodies subsurface tillage and contour planting on terraced fields, development of a soil-conserving crop rotation that contemplates getting alfalfa and bromegrass over the whole farm at regular intervals, a tame-grass pasture rotation system, and grassed waterways to dispose of water safely.

That is, the plan was put into effect after he had rearranged his fields so that the various parts of the farm could be put to their best use according to the capabilities of the land. Fences were put on the contour so that the fields would fit the new

Even the garden is contour-farmed.

system of farming. Smaller gullies were made into grassed waterways. Land retired from cultivation was seeded to grass. A windbreak was planted to protect buildings and lots.

"Farming is a lot more interesting now," Sibbernsen says. "After one gets accustomed to conservation farming and sees what it accomplishes, he can't help figuring out ways to improve the farm further by trying out new practices, new crops, new field arrangements and new wrinkles in management. I never cease to be amazed at the way the land will respond. It is a long-time program, and how much more fun it is to build than to tear down!"

One of the changes is in the way he handles livestock. Sibbernsen used to depend on drylot feeding. Now he pastures his stock and feeds them grain at the same time. His bromegrass-alfalfa pasture system is developed largely around the ponds in the old gullies, a combination which he claims will result in good pasture from early spring

Some of the Sibbernsen cattle near one of the farm's five ponds. The waterway, where once was a large gully, can be seen extending diagonally back from the pond. In the background is part of a pasture, divided by a temporary fence, which is rotated around the pond as part of the long-time crop rotation. The whole farm is covered by pastures rotated around ponds.

until late fall. Grain is available in self-feeders out in the pasture at all times, and very little drylot feeding is done.

Handling the livestock in this way, Sibbernsen points out, gets the weight gains with a lot less grain and much less work than drylot feeding. Besides, he contends, the stock are out on clean ground where they can move around and their general health is better. Of much importance right now, too, is the fact that the bromegrass and alfalfa meet most protein requirements while drylot feeders face shortages in protein concentrates.

"This method," he says, "also builds up the farm. The fertility is applied directly to the land, with no leaching away. We pasture 5 steers per acre, and the fertility from the corn crops is returned to the land. Only what the steers carry away is lost, and that amounts to little. See how

All of the farm's crop land is terraced, farmed on the contour, and subsurface tilled. Note the litter on the surface.

it works? The pastures are rotated, so that the entire farm benefits."

Before starting the practice of subsurface tillage, 5 years ago, Sibbernsen contour-listed his croplands.

"There are so many advantages to subsurface tillage," he says. "One can cover so much ground this way, and do a better job of preparing the soil than by plowing. It's less expensive, too. And it's hard for one who has not seen it to believe the amount of water sub-surface-tilled land will soak up. Contour-listing and terraces held the soil, all right, but they couldn't hold nearly so much water. We've had some favorable years, but one of these days we'll be really glad for every drop of water impounded."

Representatives of the Skelly Oil Company found out what he meant after the presentation of the award, when they were shown over the farm. They remarked at the slight evidence of runoff and erosion on the subsurface-tilled land, even though there had been a heavy rain—part of a protracted wet season—only a few days previously. Except for one small plowed strip which is part of a demonstration he is conducting in cooperation with the Soil Conservation Service, Sibbernsen plants everything on the contour, on terraced land that has been subsurface tilled.

"We plant everything on subsurface-tilled land and on the contour—feed crops, soybeans, potatoes, even the garden. The first operation is done right after harvest. In wet seasons, it may have to be repeated, to control weeds. In spring each field is subsurface-tilled again, then packed before seeding. There just isn't any washing of soil now. I know where the soil is likely to pile up and I keep close watch, but there are no signs of erosion. And that means, of course, that no crops are washed out."

Sibbernsen calls his farm a 7-man place. He normally depends on himself, two sons and four hired men. But with the boys gone from the farm, five actually are carrying on. And yet—"We get the work done on time." That is one of his evaluations of the worth of conservation farming.

"All in all," Sibbernsen concludes, "I've been on this farm 19 years and production has doubled in that time. Most of the increase has come during the 10 years I have been conservation farming. And we have only just started."

Now his achievement has received recognition. The Skelly award was presented at a breakfast at the Sibbernsen farm home, the program being broadcast nationally. The $100 war bond was divided at Sibbernsen's request among the men who work with him, in recognition of their part in the farm's achievement—"They did most of the work."

Behind it all, though, is an even greater satisfaction. He was a pilot in World War I. His two sons are serving in World War II, one as a Marine fighter pilot operating from an airplane carrier, the other serving in the Merchant Marine. He's backing up those boys—and other dads' boys, too, —to the limit.

And now, since the boys have been home on furloughs, Sibbernsen knows that his work will go on. Both boys plan to return to the farm immediately after the War. one to devote his energies to carrying on the conservation and crop program his dad has begun, and the other to specialize in the livestock end.

Why Banks Want Soil Conservation

By T. S. BUIE

For 18 months a certain bank's soil conservation advertisements had been coming across our desk. Timely, informative and usually illustrated with photographs, they urged farmers to work with the Catawba Soil Conservation District.

"Make the Best Use of Every Acre on Your Farm," the bank was urging.

Or, "This Land May Be Down But It Is Not Out." The picture with this ad showed a badly-gullied hillside.

Or, "Strip Cropping Saves Your Soil and Increases Yields."

Of course we had a good idea why the Rock Hill, S. C., National Bank, like other banking institutions and associations, are supporting the new style of arming. But we wanted to get the story first hand. With E. P. Classcock, Rock Hill dairyman and supervisor of the Catawba Soil Conservation District, we called on John A. Black, president of the bank, who is a native of York County.

"Tell us what you told me the other day about your soil conservation ads," prompted Glasscock.

"We began our advertising program about four years ago soon after we opened the bank," Black explained. "About 18 months ago we started soil

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Editor's Note.—The author is regional conservator, Soil Conservation Service, Spartanburg, S. C.

Banker Black is putting soil conservation practices on his own land. Here, with Dan S. Hollis (left), a neighbor, he is examining a good growth of crimson clover and oats. The bank president has arranged with Hollis to combine the clover seed crop.

conservation ads. And the only ads which have ever been mentioned to me by a newspaper reader not connected with the bank have been our ads about soil conservation. You see, I'm out of the bank quite a bit—on the street, out in the country, at the community stores, or on some one's farm. Many people tell me they've seen our ads about kudzu, or winter cover crops, or good land use. But no one outside the bank has ever told me he read one of our regular advertisements."

President Black went on to explain that one-third of his bank's advertising budget is spent in support of soil conservation work. Three ads are published each week. Two are standard, formal bank advertisements. The third, appearing each Friday, carries a message about soil conservation.

M. B. Brissie, district conservationist, and J. T. Brannon, work unit conservationist, assigned by the Soil Conservation Service to Catawba Soil Conservation District, help Black prepare the copy. Typical of these messages is this one:

"Every Plan Does Not Result in Success. But every success is the result of a plan.

"Have you planned the wise use of your land? Call on your Soil Conservation District Supervisors for help in working out a complete plan for your farm."

The picture used in this display showed a farmer and a Soil Conservation Service technician on the land discussing a farm conservation plan.

"Mr. Brissie and Mr. Brannon have done much of the work in connection with the advertisements, and they deserve a lot of credit for them," the banker said.

Although Black calls on the Soil Conservation Service technicians for help in preparing his advertising copy and refers farmers to the soil conservation district for assistance, he has a good working knowledge of soil conservation himself. He proved that later in the day, on his own farmland and on the farms of others.

"Why are you supporting soil conservation like this?" we asked.

Black reached for his hat. "Come on," he said, "I'll show you."

With District Supervisor Glasscock and Assistant State Conservationist A. F. Ruff of Columbia, formerly manager of the Soil Conservation Service demonstration project on Fishing Creek watershed, we drove from Rock Hill to Chester.

At one place the banker pointed to a steep, eroded hillside.

"That's the kind of land we had in mind when we wrote our ad about land that may be down but not out," Black explained. "We have more than 50,000 acres of once fertile land in York County that is now on the way out. It has become too poor for row crops, and has been abandoned. Farmers have clipped all the coupons. They have lost production and income from 50,000 acres. Merchants and business men have lost trade—or banking business—to that extent. But this land can be returned to production with kudzu or sericea, and that's why we wrote an ad about it."

At John Getty's farm we stopped briefly to watch sloping, cultivated land being terraced as part of the establishment of a complete soil conservation program. Heavy equipment is owned by Tarver Township, and Glasscock, who also is township commissioner, makes the equipment and an operator available to farmers at $3 an hour for construction of terraces. Last year the equipment built 400,000 feet of terraces, and the township received about $4,000 additional revenue.

Then we drove by a farm that was green with small grain. "A few years ago," Black said, "this farm was considered one of the worst in this community. Now it's one of the best—and getting better all the time. The new owner worked hard,

and the soil conservation district helped out in planning and establishing conservation practices."

The next stop was at the Dan S. Hollis farm. Hollis took time out from a job of clearing a small area of brush and undesirable trees, as the first step in developing an improved pasture, to show us over his 274-acre farm.

"When I bought the farm seven or eight years ago, this land was abandoned," Hollis said, pointing to a 20-acre field of barley. "Last year I harvested 50 bushels of barley per acre. We built up productiveness with small grain and lespedeza. I believe we turned under one crop of cowpeas, and we spread barnyard manure on the worst eroded areas."

"That's what I mean," Black said. "Farmer, community, county and other towns are getting the benefit of 20 producing acres here where a few years ago nothing at all was returned."

Hollis showed us critical slopes not suitable for cultivation which he is seeding to sericea lespedeza, a perennial legume excellent for grazing and for hay production. He soon will have 14 acres in sericea.

Hay and grain produced on the farm are marketed primarily through 14 dairy cattle and 34 beef cattle.

Black took us to one of his farms where he is developing improved pastures on bottomlands. It lies along Fishing Creek. He wouldn't say how much grazing these pastures had given his registered Angus cattle during the past year, because "it's so much no one would believe it, anyway."

The Rock Hill banker was particularly proud of an upland field of crimson clover and oats. Although this field would have provided a great amount of grazing, Black was saving the clover for seed production.

On the way back to Rock Hill, Black enlarged on his answer to the question, "Why are you supporting soil conservation?

"When a man sees his farm improving, he just naturally takes more interest in his farm, and more interest in his equipment, his buildings, and his home," he explained. "His farm does begin to improve from the day he starts putting a soil conservation program on it. Then, as he gets higher yields per acre and greater income, he's in a better position to try new crops, to diversify, and to improve his living standard."

Then he reverted to the banker's viewpoint—"Soil conservation certainly increases a farmer's ability to meet his obligations. It is good business for him—and for us too."

NEGRO SOIL CONSERVATIONISTS

(*Continued from page* 62)

Lloyd Boyd is one of them. When his sons return from the Army, they will find some mighty good land—land much better than it once was.

The white Dutch clover in Boyd's pasture is affording excellent grazing for his six cows. He has improved several acres of his pasture and he has a very good stand of Dallis grass and white Dutch clover. The day we visited his farm he had just finished planting cotton, the acreage of which he has reduced by about two-thirds. He was preparing with his small tractor a few acres of very rich bottomland to be seeded to pearl millet, which will supplement his permanent pasture.

As we prepared to drive away from Boyd's home, he called to Carter, "Don't forget to get $30 worth of pearl millet seed and drop it by here when you are next passing. If you haven't got the money handy, let Mr. Ruff pay for it." And that I gladly agreed to do.

Lloyd Boyd looks to the day when he can retire and turn his farm over to his sons who are now in the army. The land will be much more productive, because of soil conservation practices.

HOW TO GET *SOIL CONSERVATION*

Subscriptions to this magazine—$1 per year—should be sent to the Superintendent of Documents, Government Printing Office, Washington, D.C.

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REVIEWS

PUBLIC SPEAKING FOR TECHNICAL MEN. By S. Marion Tucker. McGraw-Hill. 1939.

This book is meant for any individual who has an occasion to speak in public. It takes the view that any speaker's main business is to hold the attention of his audience. The common trait of all of us, "nervousness," is given early treatment, as no speaker can control his audience until he can control himself. Through an imaginary character, Mr. Morrison, the reader follows all the preparation for a talk, even to the checking of stage, hall, lights and other mechanical items which are so often important in the successful delivery of a speech.

The book's method is novel and interesting. Imaginary characters are created who in themselves illustrate the various good and bad points of public speaking. For example, analysis brings out the weak voice of Mr. Lane, the mumbling of Mr. Brewster, the poor English of Mr. Armstrong, the incoherence of Mr. Reynolds, the annoying mannerisms of Mr. Hollister, the misuse of materials and charts by Mr. Connelly, the misuse of the blackboard and exhibits by Mr. Fulton, and the fine speech at the luncheon by Mr. Morrison, who shows how preparation and technique can be used to advantage. "Public Speaking for Technical Men," thus breaks away for the formal textbook style to resemble an informal discussion between friends. This makes the volume somewhat more wordy than it might otherwise be, but it also makes for easier reading by the average person who wishes to improve his understanding of public speaking principles.

The authors point out that the technical man has the advantage of an interesting subject. He also has the advantage of an audience that is more or less familiar with, and interested in the material he wishes to present.

Every member of the Soil Conservation Service occasionally has an opportunity to talk on some phase of soil and moisture conservation. Many a technician can do an effective job of putting across to his audience, be they farmers, bankers, school teachers, service club members, or garden club members, the ideas he wishes them to have and to understand. Many group meetings owe their success to the ability of the technician to arouse interest and to keep that interest alive. The technician who can "handle" himself in front of a group, and can put his thoughts in such a manner that he gets a favorable reception and desired action, is the type of technician who is often most successful in getting conservation on the land.

Grover F. Brown.

TROPICAL KUDZU

(*Continued from page* 65)

of making a rather definite effort after these men return to us at the end of the war to get each of them to write a report of promising plants that were observed, particularly on the Pacific Islands. Many of these islands were little known before the war. It may be that information gleaned from our people will suggest post-war plant exploration which might yield rich returns.

Plants introduced into this country as a result of observations made by our men engaged in the destructive business of war may have real value in our future agriculture. Thus, Southern farm boys fighting in distant lands, in looking for old friends, may have found new and useful plants that will help save the soils and improve the agriculture of their native Southland.

FIRST BOW

Recently issued is Volume 1, Number 1, of The Journal of the Soil Conservation Service of New South Wales. Leading article is by the Hon. W. J. McKell, M.L.A., Premier and Colonial Treasurer, who writes: "The battle against man-made erosion will be long and continuous, for the menace of erosion is ever present; but the decks have been cleared for action and now the action has begun. It is a fight which can be won; it is one which we cannot afford to lose."

WHO? WHERE? WHAT?

J. B. Ketcham, county agent, Warsaw, N. Y., has an excellent idea, well worth adoption elsewhere. In a recent letter to all cooperators in Wyoming County—on one sheet—he briefly and clearly tabulated the duties of the local offices of the Extension Service, the Agricultural Adjustment Agency, and the Soil Conservation Service. He listed locations, names of those in charge, and telephone numbers. Then he noted the kind of information, counsel and help which each of the offices is prepared to supply. He left no room for confusion among farmers as to lines of responsibility and services, demonstrated that there is no overlapping of functions, made it easier for farmers to do business.

REFERENCE LIST ☆☆

Compiled by William L. Robey, Printing & Distribution Unit

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[1] From the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

[2] Limited supply available from Soil Conservation Service, U. S. Department of Agriculture, Washington 25, D. C.

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